



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
1650 Arch Street  
Philadelphia, Pennsylvania 19103-2029**

23 JUL 2011

Ms. Ginger Mullins, Chief  
Regulatory Branch  
Huntington District  
U.S. Army Corps of Engineers  
502 Eighth Street  
Huntington, West Virginia 25701-2070

Re: Public Notice No. 2008-1101-TUG; Central Appalachia Mining, LLC; Grapevine Fork Surface Mine; Mingo County, West Virginia

Dear Ms. Mullins:

The U.S. Environmental Protection Agency (EPA) has reviewed the public notice for Central Appalachia Mining (CAM), LLC's Grapevine Fork Surface Mine located near Edgerton, Mingo County, West Virginia. EPA's review and comments, provided herein, are based upon the Public Notice issued June 13, 2011 and supplemental documentation including an Environmental Information Document (EID) and associated attachments.

EPA's review is intended to ensure that the proposed project meets the requirements of the Clean Water Act (CWA). The CWA Section 404(b)(1) Guidelines (40 C.F.R. Part 230) provide the substantive environmental criteria against which this application must be evaluated. Fundamental to the Guidelines is the premise that no discharge of dredged or fill material may be permitted if: (1) it causes or contributes, after consideration of disposal, site dilution and dispersion, to violations of any applicable state water quality standard; (2) a practicable alternative to the proposed discharge exists that would have a less adverse impact on the aquatic environment; or (3) the discharge would cause or contribute to significant degradation of the waters of the United States. See 40 C.F.R. § 230.10.

The project proposes to utilize surface contour and auger/highwall mining to extract approximately 2.5 million tons of bituminous coal. The project involves the construction of one valley fill, one temporary sediment pond, and one pond access road. The proposed project would result in the total impact of 4,573 linear feet (lf) of ephemeral, intermittent and perennial reaches of unnamed tributaries to Grapevine Fork and the Left Fork of Grapevine Fork. The construction of the proposed valley fill would permanently impact 2,023 lf of perennial stream and 236 lf of intermittent stream. The mineral removal area would result in the permanent impact to 664 lf of intermittent stream and 749 lf of ephemeral stream. The construction of the proposed temporary sediment pond would impact 694 lf of perennial stream and 118 lf of intermittent stream. The construction of the pond access road would temporarily impact 89 lf of intermittent stream. The applicant proposes to relocate 1,732 lf of perennial stream prior to valley fill construction, restore



all temporary impacts, and provide payment to the West Virginia In-Lieu Fee (WVILF) program for the balance of required compensatory mitigation.

The project is located in the Beech Creek - Tug Fork subwatershed within the Tug Fork River sub-basin. Current mining activities are underway within the Beech Creek - Tug Fork subwatershed, including the permittee's adjacent existing operation, Grapevine East Surface Mine. Within this subwatershed, the Tug Fork River is listed as impaired on the CWA Section 303(d) list for fecal and biological impairments. There are approved Total Maximum Daily Loads (TMDL) for metals and pH in Tug Fork River Watershed.

Based on information provided by the applicant, the Left Fork of Grapevine Fork downstream of areas proposed to be impacted had West Virginia Stream Condition Index (WVSCI) scores calculated as 90.66 and 90.42. The impact areas had Rapid Bioassessment Protocol (RBP) habitat scores of 118 and 156 respectively, indicating marginal to sub-optimal habitat. The Left Fork of Grapevine Fork had measured in-stream conductivity levels ranging from 175.98 - 1112.12  $\mu\text{S}/\text{cm}$  at the sampling site downstream of the proposed pond location. A sampling location on Left Fork of Grapevine Fork above the confluence with Grapevine Fork had measured in-stream conductivity levels ranging from 252.53 - 522.00  $\mu\text{S}/\text{cm}$  and selenium levels  $<1.95 \text{ ug}/\text{l}$ . Our review of the information provided indicates that additional data needs to be provided to fully characterize stream segments that are proposed to be impacted by this project. Specific comments, questions, and recommendations regarding water quality data can be found in the enclosure to this document.

The alternatives analysis should identify the least environmentally damaging practicable alternative. See 40 C.F.R. 230.10(a). The alternatives analysis included in the EID submitted by the applicant analyzes several extraction methods, including underground and surface mining methods, and amounts of coal extracted by various alternatives. Also evaluated were excess spoil disposal methods. The applicant's proposed alternative would extract 2.5 million tons of bituminous coal utilizing multiple extraction methods. This alternative proposes to maximize the amount of material to be placed back on the mine area. The final height of the valley fill would exceed the minimum requirements of the approximate original contour (AOC) maximization protocol. While EPA appreciates the applicant's efforts to propose an alternative that represents an overall decrease in stream channel impacts over initial and interim designs, EPA recommends that the applicant continue to incorporate additional avoidance and minimization efforts where possible. Specifically, evaluation of valley fill construction techniques or best management practices in addition to the proposed "bottom-up" construction method that can be included and designed to protect downstream water quality and prevent significant degradation of the aquatic ecosystem should be included. The applicant must demonstrate prior to authorization and construction of the proposed action that the project will not cause and contribute to significant degradation and/or an excursion from applicable water quality standards. See 40 C.F.R. 230.10(c). To support this showing, EPA recommends that the applicant develop and provide a detailed monitoring plan and an adaptive management plan that includes appropriate thresholds to trigger adaptive remedial actions for mining activities to address potential water quality issues as necessary and to prevent significant degradation. Additional comments and questions regarding the alternatives analysis are enclosed.



The fundamental objective of compensatory mitigation is to offset unavoidable impacts to waters of the United States authorized by the permit. See 40 C.F.R. 230.93(a). The applicant has proposed the relocation of 1,732 lf of low-slope perennial stream, restoration of temporary stream impacts and payment into WVILF as compensatory mitigation for unavoidable impacts to waters of the United States. As stated in the Public Notice, the applicant must provide a comprehensive Compensatory Mitigation Plan (CMP) including baseline stream conditions, post-project stream conditions, accounting of functional losses and gains, proposed compensatory mitigation, chemical, biological and physical success criteria, and monitoring and adaptive management plans. While EPA recognizes that WVILF is an approved method to provide compensatory mitigation, EPA is unaware of any proposed in-lieu fee projects, or any planned projects within the applicable service area. In general, compensatory mitigation should be located in the same watershed as the impacted site and should be located where it is most likely to replace the lost functions and services. In the absence of any proposed in-lieu fee projects in the subwatershed, EPA believes that use of the WVILF may not offset the lost functions and values of impacted streams. To the extent the applicant wishes to utilize the WVILF, EPA recommends that the applicant work with the WVILF to identify appropriate in-lieu fee projects within the watershed that will offset unavoidable impacts from this project. While the applicant does not propose permittee-responsible mitigation because, according to the applicant, stream compensatory mitigation opportunities have been exhausted on CAM property in the Beech Creek – Tug Fork subwatershed, consideration of compensatory mitigation opportunities should not be limited to property owned by the applicant. Opportunities that may help satisfy compensatory mitigation requirements elsewhere in the watershed should be explored.

Given the past, present, and proposed future mining activities within the subwatershed, EPA continues to recommend that the Corps conduct a thorough cumulative effects analysis pursuant to 40 C.F.R. Sections 230.1 (c), 230.11(g) and 230.12, which includes a detailed presentation of past, present, and reasonably foreseeable activities. We suggest an approach that would manage and link proposed projects to overall water quality and habitat improvement on a subwatershed and sub-basin basis. Consideration of environmental justice (EJ) should also be given.

EPA is concerned that the project, as proposed, may result in substantial and unacceptable impacts to aquatic resources of national importance as covered in Part IV, paragraph 3(a), of the 1992 CWA Section 404(q) Memorandum of Agreement (MOA) between EPA and the Department of the Army. EPA is committed to working with you and the applicant to assure that the proposed impacts resulting from this project are the least environmentally damaging practicable alternative, consistent with the CWA Section 404(b)(1) Guidelines and that significant degradation is prevented. EPA would like to work with the Corps and the applicant to develop an appropriate and effective monitoring and adaptive management plan, which includes appropriate water quality triggers to ensure that the project will achieve the goals of preventing significant degradation to waters of the U.S downstream of the operation. Please find enclosed our project-specific comments and questions.



Thank you for providing EPA the opportunity to review and provide comment on the Public Notice for the Grapevine Fork Surface Mine. If you have questions, please do not hesitate to contact Ms. Alaina DeGeorgio, Physical Scientist, at 215-814-2741.

Sincerely,

  
John R. Pomponio, Director  
Environmental Assessment & Innovation Division

Enclosure



## Detailed Technical Comments- Grapevine Fork Surface Mine

### *Alternatives Analysis*

- Underground mining alternatives analysis states that neither a cleaning and preparation plant or a refuse disposal facility is not available to CAM on site. Please provide the nearest location of such facilities in relationship to the project site. A discussion of possible impacts from the creation and use of such facilities would also strengthen the alternatives analysis, especially when impacts could be compared to possible impacts from valley fills.
- Utilizing existing valley fills on other CAM mines was also explored in the alternatives analysis. It is not clear if there is available capacity in these fills, or why the transport distance of three miles is not feasible. Please provide distance and capacity information for nearby CAM valley fills. Transporting some of the excess overburden from Grapevine Fork Surface Mine to another valley fill should be explored. EPA encourages the applicant to consider transporting part of the overburden to the adjacent site, especially in light of the fact that Grapevine Fork Surface Mine will be accessed through the adjacent site.
- Please specify how many acres of the site will drain into the valley fill.
- The EID states that valley fill benches will be compacted. At what rate will fills be compacted? What size will the lifts be constructed? How will utilizing different compaction and lift sizes affect infiltration? Please discuss in more detail how valley fills will be constructed. EPA recommends that the applicant consider identifying and using durable rock that is relatively low in total sulfur content and low in excess calcium carbonate neutralization potential in the construction of the underdrains.
- Please provide CAM's adjacent mines - Grapevine East and South Surface Mines - water quality and benthic monitoring data.
- Please describe how the construction of the proposed valley fill for the Grapevine Fork Surface Mine will differ from the valley fills constructed on Grapevine East and South Surface Mines.
- The EID refers to impacts resulting from an 'infrequently used access road'. Is this an existing road on site that requires improvements or are impacts resulting from new road construction?
- It appears that a special materials handling plan has been developed for acid producing layers. It is unclear if a materials handling plan is needed or has been developed for selenium. EPA also recommends that the applicant consider the development of a materials handling plan for Total Dissolved Solids (TDS) producing strata.

### *Compensatory Mitigation*

- The applicant proposes to relocate a segment of stream channel as part of its compensatory mitigation. Section 3.12.3.1 states that only relocation of flows is anticipated. It is not clear in the information provided how this relocated channel will replace the functions and values of the impacted reach. A detailed CMP is needed. This plan should discuss how the applicant's proposed mitigation will ensure the adequate replacement of lost stream functions and values.
- The CMP should address potential chemical impacts on restoration of impacted water quality.



- Clear performance standards to measure the success of the mitigation must be included. Benthic macroinvertebrate data, water quality, and habitat data should be collected in the proposed mitigated watercourses and used to demonstrate that the stream relocation has been successful. In addition, performance standards for the direct measurement of the hydrologic regime of the relocated channel should be incorporated.
- An expected timeframe for achievement of performance standards should be identified and the mitigation should be monitored for that length of time to ensure success or for a minimum of 10 years.

### *Water Quality*

- Baseline surface water selenium was provided for three of the four sampling locations. Please provide the selenium data for site GVE-13.
- Chemical data was provided in ranges. Please provide raw event data based on individual sampling dates.
- Site 15-07 scored marginal for RBP on embeddedness, channel alteration, bank stability, vegetative protection, and riparian vegetative zone. The stream bed issues are not apparent in the photos provided. Please clarify.
- Some sites, particularly 16-07, appear to have a bedrock stream bed. This is not included in the “percent substrate” table. Bedrock is not an ideal location for sampling.
- The applicant refers to previous deep mines on the site. Are there deep mine discharges associated with previous mining that have been identified? Please provide maps that include these areas, or identify where underground mining discharges are occurring. This information will be particularly helpful in relation to site conductivity data.
- EPA recommends the addition of a benthic macroinvertebrate sampling location on Beech Creek above Grapevine Fork.
- Table 6 in the Macroinvertebrate Survey appears to be mislabeled. Should the second 015-07 column in this table be labeled 17-07 instead of 15-07?
- It appears that some of the metrics for site 17-07 have been calculated incorrectly. EPA believes that calculations should be as follows: %EPT- 81.4, %Chiro- 92.01, Total Taxa- 77.27, EPT Taxa- 76.92, %2 dominant- 102.4, and HBI- 87.59. Please recalculate all metrics to ensure that all have been accurately calculated and properly represented in the EID.
- An adaptive remedial action plan should be developed to address increases in conductivity and any other parameters of concern to be implemented if water quality protection values are exceeded. The adaptive management plan (AMP) should include multiple trigger points to ensure that remedial actions are initiated in advance of water quality impacts reaching levels associated with causing or contributing to a violation of water quality standards or significant degradation.
- Based on the data available to EPA, EPA recommends developing appropriate thresholds for conductivity as the first trigger for implementation of the AMP. At the trigger level, a previously-identified set of actions would be employed with the objective to prevent conductivity values from affecting water quality and resulting in significant degradation. The purpose of the trigger level is to identify increases in conductivity and to initiate adaptive and remedial action before instream conductivity rises to a level known to adversely impact the naturally occurring aquatic community. The trigger level should be developed considering best available science (including but not limited to EPA’s field-



based aquatic benchmark for conductivity in Appalachian streams (i.e., 300 uS/cm)) in light of site-specific data available for the project area. For certain project area streams, the baseline conductivity levels appear to be already exceeding 500  $\mu$ S/cm. This information should be taken into account when developing a conductivity trigger. At a minimum, absent site-specific information that would point to a different level, where current baseline values exceed 500 uS/cm, the trigger should be set to maintain these baseline levels.

#### *Other Comments*

- Attachment 1- This attachment appears to be missing benthic survey locations.
- Attachment 5 - It does not appear that all of the area that is proposed to be mined in this project has been delineated for aquatic resources. Please clarify if the northeast corner of the project area shown on this figure has been delineated.
- The document states that the Tug Fork is listed as a high quality stream due to desirable native and/or stocked fishes. Please clarify if similar species exist within the waters proposed to be impacted or if a fish survey has been done in this reach.

